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EXAMINER	
CHOWDHURY, TARIFUR RASHID	
ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 03/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

EV

Office Action Summary	Application No.	Applicant(s)	
	10/072,455	KAWAMOTO ET AL.	
	Examiner	Art Unit	
	Tarifur R. Chowdhury	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,8-14,16-27 and 29-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,8-14,16-27 and 29-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 35 and 36 are objected to because of the following informalities:

In claim 35, line 1, "the optical element" lacks antecedent basis. Further, since it is not clear as to which optical element applicant is referring to, for examination purposes it is assumed that as long as there is an optical element behind the liquid crystal cell, the claim limitation is met.

In claim 36, "the optical element" and "the backlight" lack antecedent basis. Once again, since it is not clear as to which optical element applicant is referring to, for examination purposes it is assumed that as long as there is an optical element between a backlight and a liquid crystal cell, the claim limitation is met.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims, 1, 3, 4, 6, 8, 11-14, 16, 19-22, 24, 25, 27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al., (Harada), USPAT 6,381,068.

5. Harada discloses (col. 4, lines 53, 64-67; col. 8, lines 5-9; col. 10, lines 43-55; col. 11, lines 56-61; col. 12, lines 59-63; col. 13, lines 1-12) and shows in Fig. 4A, a polarizing element comprising a reflective polarizing plate comprising a cholesteric circularly-polarized light separation plate (236') for separating incident natural light into reflected light and transmitted light both of which are composed of polarized light, a retardation plate (234') (quarter-wave plate) and a diffusing element (220') interposed between the circularly-polarized light separation plate and the retardation plate.

Harada differs from the claimed invention because he does not show in Fig.4A or discloses in reference to Fig. 4A that the diffusing element is a pressure-sensitive adhesive as well. However, Harada discloses (col. 11, lines 56-61) that the diffusing element can be attached to a surface of a polarizing element by an optically transparent adhesive layer. Further, in **col. 10, lines 45-55**, Harada also discloses that the diffusing element may include a transparent base made of polymer and at least one diffusing material such as uncolored transparent particles dispersed in the transparent base material wherein the size of the light diffusing particles is preferably 0.1 to 500 micrometers (overlaps the claimed range). It is also common and known in the art to

integrate plural layers into one to reduce the number of layers and thus reduce manufacturing cost and make the device thin and compact.

Therefore, it would have at least been obvious to one of ordinary skill in the art from the disclosure of Harada to integrate the diffusing element and the adhesive layer into one layer so that number of layers is reduced and a polarizing element that is thin and lightweight is obtained.

Further, the method of manufacturing the polarizing element merely recites the steps of forming each element and since each element must be formed to make the polarizing element the method would have been obvious in view of the element.

Harada also discloses that the reflective polarizing plate may comprise a linearly-polarized light separation plate (col. 4, lines 53, 64-67).

Accordingly, claims 1, 3, 4, 6, 8, 10-14, 16, 18-22, 24, 25, 27 and 30 would have been obvious.

As to claims 31-34, it would have been obvious to one of ordinary skill in the art to use plurality of light-diffusion pressure sensitive adhesive layers for several advantages such as to double the desired output. Further, it should also be noted that the specification of the instant application does not recite any criticality of using two or more light-diffusion pressure sensitive adhesive layers.

5. Claims 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harada in view of Mikura et al., (Mikura), USPAT 5,880,800.

6. Harada does not explicitly disclose that the polymer is an acrylic polymer having a weight average molecular weight of at least 100,000.

Mikura discloses optical film having pressure sensitive adhesive layers wherein the pressure-sensitive adhesive layers are made of polymers wherein the polymer is an acrylic polymer having a weight average molecular weight of at least 300,000 (col. 1, line 5; col. 5, line 55 – col. 6, line 2). Mikura also discloses that such an optical film is excellent in heat resistance and moisture resistance (col. 1, lines 6-7).

Mikura is evidence that ordinary workers in the art would find a reason, suggestion or motivation to form pressure-sensitive adhesive layers using acrylic polymer having a weight average molecular weight of at least 300,000.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the pressure-sensitive adhesive layer of Harada by using an acrylic polymer having a weight average molecular weight of at least 300,000 so that an optical film with excellent heat resistance and moisture resistance is obtained, as per the teachings of Mikura.

Accordingly, claims 9 and 17 would have been obvious.

7. **Claims 1-8, 10-16, 18-27, 29 and 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kameyama et al., (Kameyama), USPAT 5,999,243 (provided by the applicant) in view of Harada.**

8. Kameyama discloses and shows in Fig. 6, a liquid crystal display including a polarizing element wherein the polarizing element comprising a circularly polarized light separator (1) and quarter wave plate (3) (either only the circularly polarized –light separator or the combination of the light-separator and the quarter wave plate being applicant's reflective polarizing plate) for separating incident light into reflected light and

transmitted light both of which are composed of polarized light (col. 5, line 59 – col. 6, line 7; col. 12, line 6-56). Kameyama also discloses the use of pressure-sensitive adhesive to laminate multiple layers (col. 13, lines 28-47).

Kameyama differs from the instant invention because he does not explicitly disclose that the pressure-sensitive adhesive layer has diffusive properties.

Harada discloses and shows in Fig. 4A, a polarizing element comprising a reflective polarizing plate comprising a cholesteric circularly-polarized light separation plate (236') for separating incident natural light into reflected light and transmitted light both of which are composed of polarized light, a retardation plate (234') (quarter-wave plate) and a diffusing element (220') interposed between the circularly-polarized light separation plate and the retardation plate and such an structure enhances image brightness and/or contrast (col. 11, lines 5-7). Harada also discloses (col. 11, lines 56-61) that the diffusing element can be attached to a surface of a polarizing element by an optically transparent adhesive layer. It is also common and known in the art to integrate plural layers into one to reduce the number of layers and thus reduce manufacturing cost and make the device thin and compact. Harada also discloses (**col. 10, lines 45-55)** that the diffusing element may include a transparent base made of polymer and at least one diffusing material such as uncolored transparent particles dispersed in the transparent base material wherein the size of the light diffusing particles is preferably 0.1 to 500 micrometers (overlaps the claimed range).

Harada is evidence that ordinary workers in the art would find a reason, suggestion or motivation to employ a light-diffusion pressure sensitive adhesive layer between the circularly-polarized light separation plate and a retardation plate.

Therefore, it would have at least been obvious to one of ordinary skill in the art at the time of the invention was made to modify the polarizing element of Kameyama by employing a light-diffusion pressure sensitive adhesive layer between the circularly-polarized light separation plate and a retardation plate for the advantage of enhanced image brightness and/or contrast.

Further, the method of manufacturing the polarizing element would have been obvious in view of the device.

Accordingly, claims 1, 2, 6, 7, 8, 10-16, 18, 20, 25, 27 and 37 would have been obvious.

As to claims 26 and 29, Kameyama discloses (col. 13, lines 28-34) that in his invention, the layers constituting the optical element, e.g., a liquid crystal element (separation layer for circular light polarization), a retardation plate, a polarizing plate, and a light guide, can be united by laminating with each other through an adhesive. Thus it is clear from the disclosure of Kameyama that the polarizing element includes at least one adhesive layer besides the pressure-sensitive adhesive layer.

As to claims 31-34, it would have been obvious to one of ordinary skill in the art to use plurality of light-diffusion pressure sensitive adhesive layers for several advantages such as to double the desired output. Further, it should also be noted that

the specification of the instant application does not recite any criticality of using two or more light-diffusion pressure sensitive adhesive layers.

As to claims 3, 4, 21 and 22, Kameyama discloses that the circularly polarized light separation plate (1) comprises a cholesteric liquid crystal polymer which has undergone Grandjean orientation (col. 5, lines 59-61).

As to claims 5 and 23, Kameyama also discloses that the cholesteric liquid crystal layer can be a superimposed structure of cholesteric liquid crystal layers different from each other in a helical pitch of Grandjean orientation (col. 7, line 65- col. 8, line 3).

As to claims 19 and 24, Kameyama discloses that the polarizer of the invention is not limited to circularly-polarized light separator but also linearly-polarized light separator (col. 5, lines 51-55).

As to claims 35 and 36, Kameyama clearly shows in Fig. 6 that an optical element is disposed between a backlight (5) and a liquid crystal cell.

9. Claims 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kameyama and Harada as applied to claims 1-8, 10-16 18-25 and 31-34 above and further in view of Mikura et al., (Mikura), USPAT 5,880,800.

10. Kameyama in view of Harada discloses that the pressure-sensitive adhesive is made of a polymer but do not explicitly disclose the polymer is an acrylic polymer having a weight average molecular weight of at least 100,000.

Mikura discloses optical film having pressure sensitive adhesive layers wherein the pressure-sensitive adhesive layers are made of polymers wherein the polymer is an acrylic polymer having a weight average molecular weight of at least

300,000 (col. 1, line 5; col. 5, line 55 – col. 6, line 2). Mikura also discloses that such an optical film is excellent in heat resistance and moisture resistance (col. 1, lines 6-7).

Mikura is evidence that ordinary workers in the art would find a reason, suggestion or motivation to form pressure-sensitive adhesive layers using acrylic polymer having a weight average molecular weight of at least 300,000.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the pressure-sensitive adhesive layer of Kameyama when modified by Harada such by using an acrylic polymer having a weight average molecular weight of at least 300,000 so that an optical film with excellent heat resistance and moisture resistance is obtained, as per the teachings of Mikura.

Accordingly, claims 9 and 17 would have been obvious.

Response to Arguments

11. Applicant's arguments filed on 01/04/2006 have been fully considered but they are not persuasive.

In response to applicant's argument that it is not common and known in the art to integrate plural layers into one to reduce the number of layers and thus reducing manufacturing cost and make the device thin and compact, it is respectfully pointed out to applicant it is in fact a common practice in the art to make a device as compact and thin as possible and one of the several ways of doing it by integrating plural layers so that one layer can perform the functions of several layers. Since Harada discloses the use of a diffusing layer to be attached to a polarizing element by an adhesive layer one of ordinary skill in the art having the most common goal in the art in mind would be

motivated to integrate the adhesive layer and the diffusing layer into one layer so that such layer can function as both a diffusing layer and an adhesive layer at the same time to obtain a polarizing element that is thin and lightweight. Further, it is also pointed out to applicant that the integration of a diffusing layer and an adhesive layer would not alter the viewing angle or the color uniformity since the adhesive property of the combined layer would provide adhesion between the layer and the polarizing element while the diffusive properties of the layer would provide diffusing characteristics.

Further, applicant's argument that the present inventors have unexpectedly discovered that the claimed light-diffusion pressure-sensitive adhesive layer provides several advantages such as avoidance of unpredictable phase contrast and excellent polarization performances and improved display quality is irrelevant since the claims fail to recite any such unexpected advantages.

In response to applicant's argument that in the display devices of the present claims, light exiting the optical element comprising reflective polarizer are expected to be transmitted through several optical layers, often including polarizing layers and liquid crystal cell and therefore, optical transformations occurring in the optical element are more likely to be amplified in the light finally transmitted to the viewer, it is respectfully pointed out to applicant that the argument is irrelevant since the claims do not recite such limitations.

Accordingly, the examiner holds the validity of the rejection to be proper and thus maintained.

Conclusion

12. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R. Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRC
March 06, 2006

TARIFUR R. CHOWDHURY
PRIMARY EXAMINER